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| 10/521,244 | 01/14/2005 | Shinjiro Ogita | KSM-0228 | 7196 |

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Cheng Law Group, PLLC
1100 17th Street, N.W.
Suite 503
Washington, DC 20036

| EXAMINER | |
|---|---|
| MEHTA, ASHWIN D | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/521,244 | OGITA ET AL. | |
| | Examiner | Art Unit | |
| | Ashwin Mehta | 1638 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01142005; 08182005; 02212006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Priority*

1. Page 1 of the specification indicates that the instant application is a continuation-in-part of International Application PCT/JP2003/009008. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b).

A certified copy of JP 2002-207221 has been received.

### *Claim Objections*

2. Claim 2 is objected to because of the following informalities: in line 3, the word "emzyme" is misspelled. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1: the recitation "an enzyme related to the caffeine biosynthetic pathway" renders the claim indefinite. It is not exactly clear what enzymes are, and are not, encompassed by "related".

Further in claim 1: in lines 10-11, the article "a" in the recitation "a transformed tissue piece, a transformed callus or a transformed adventitious embryo" renders the claims indefinite. The article "a" makes it unclear whether the transformed tissue, callus, and embryo are the same as, or different from, those formed in the step recited in lines 7-9. It is suggested that all three instances of the article "a" in the recitation be replaced with --the--.

In claim 2: the claim is indefinite because it depends from itself. In the interest of compact prosecution, the claim will be examined as if it depends from claim 1.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 is broadly drawn towards a process for producing a decaffeinated coffee plant by genetic recombination, comprising preparing an antisense sequence or RNAi sequence of a gene coding for any enzyme related to the caffeine biosynthetic pathway and constructing an expression vector for transformation, introducing the vector into Agrobacterium, infecting a cell division-activated tissue piece of a coffee plant or a callus or an adventitious embryo induced

from a coffee plant tissue piece, with Agrobacterium, and obtaining a transgenic coffee plant from a transformed tissue piece, transformed callus, or transformed adventitious embryo. The method of claim 1 encompasses a broad genus of starting materials: any gene coding for any enzyme related to caffeine biosynthesis. Claim 2 depends from claim 2 and limits said process wherein the enzyme is xanthosine methyltransferase, a nucleoside deribose enzyme, a 7-methylxanthine methyltransferase, or a 3,7-dimethylxanthine methyltransferase. Claims 3 and 4 are drawn to transformed coffee plants produced by the process of claim 1 and 2, respectively.

The specification indicates that the invention concerns the production of decaffeinated coffee plants by expressing the genes for caffeine biosynthesis-related enzymes in antisense orientation, or by RNA interference (page 2). The working examples teach the production of transgenic coffee plants expressing the coding sequence for 7-methylxanthine methyltransferase in antisense orientation, and in RNAi "configuration", in which caffeine production was reduced (pages 6-12).

However, the only genes coding for enzymes related to caffeine biosynthesis that are described in the specification or prior art are those encoding xanthosine methyltransferase, 7-methylxanthine methyltransferase, and 3,7-dimethylxanthine methyltransferase. Genes of other enzymes related to caffeine biosynthesis have structures that differ from the genes encoding xanthosine methyltransferase, 7-methylxanthine methyltransferase, and 3,7-dimethylxanthine methyltransferase. The Federal Circuit provided the appropriate standard for written description in University of California v. Eli Lilly & Co. 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). The court held that a structural description of a rat cDNA was not an adequate description of broader classes of cDNAs, because a "written description of an invention involving a chemical

genus, like a description of a chemical species, requires a precise definition, such as by structure, formula, [or] chemical name, of the claimed subjected matter sufficient to distinguish it from other materials. The genes encoding xanthosine methyltransferase, 7-methylxanthine methyltransferase, and 3,7-dimethylxanthine methyltransferase are not representative of other genes encoding enzymes related to caffeine biosynthesis, including genes encoding nucleoside deribose enzymes. As the genus of starting materials for the claimed methods are not sufficiently described, the methods themselves also fall short of the written description requirement. See *University of Rochester v. G.D. Searle & Co., Inc.,* 68 USPQ2d 1424,1433 (DC WNY 2003), which teaches that method claims are properly subjected to a written description rejection if the starting material required by that method is itself inadequately described. Given the breadth of the claims it is submitted that the specification fails to provide an adequate written description of the multitude of genes coding for enzymes related to caffeine biosynthesis required as starting material for the claimed method.

5. Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the claimed methods and plants wherein the gene codes for xanthosine methyltransferase, 7-methylxanthine methyltransferase, or 3,7-dimethylxanthine methyltransferase, does not reasonably provide enablement for the claimed invention wherein the gene codes for a nucleoside deribose enzyme or other caffeine biosynthesis related enzymes. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims are broadly drawn towards a process for producing a decaffeinated coffee plant by genetic recombination, comprising preparing an antisense sequence or RNAi sequence of a gene coding for an enzyme related to the caffeine biosynthetic pathway and constructing an expression vector for transformation, introducing the vector into Agrobacterium, infecting a cell division-activated tissue piece of a coffee plant or a callus or an adventitious embryo induced from a coffee plant tissue piece, with Agrobacterium, and obtaining a transgenic coffee plant from a transformed tissue piece, transformed callus, or transformed adventitious embryo; or said process wherein the enzyme is xanthosine methyltransferase, a nucleoside deribose enzyme, a 7-methylxanthine methyltransferase, or a 3,7-dimethylxanthine methyltransferase; or a transformed coffee plant produced by the process.

The specification indicates that the invention concerns the production of decaffeinated coffee plants by expressing the genes for caffeine biosynthesis-related enzymes in antisense orientation, or by RNA interference (page 2). The working examples teach the production of transgenic coffee plants expressing the coding sequence for 7-methylxanthine methyltransferase in antisense orientation, and in RNAi "configuration", in which caffeine production was reduced (pages 6-12).

However, the specification does not teach coding sequences for all caffeine biosynthesis-related enzymes. Neither the specification, nor the prior art, teaches the gene encoding a nucleoside deribose enzyme related to caffeine biosynthesis, or encoding any other caffeine biosynthesis related enzyme other than xanthosine methyltransferase, 7-methylxanthine methyltransferase, and 3,7-dimethylxanthine methyltransferase. See In re Bell, 26 USPQ2d 1529, 1532 (Fed. Cir. 1993) and In re Deuel, 34 UPSQ2d, 1210 (Fed. Cir. 1995), which teach

that the mere existence of a protein does not enable claims drawn to a nucleic acid encoding that protein. In the absence of further guidance, undue experimentation would be required by one skilled in the art to isolate the genes or cDNAs encoding these other caffeine biosynthesis related enzymes in order to practice the claimed invention.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano et al. (U.S. Patent No. 6734342, issued May 11, 2004, filed October 5, 2001).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The claims are broadly drawn towards a process for producing a decaffeinated coffee plant by genetic recombination, comprising preparing an antisense sequence or RNAi sequence of a gene coding for an enzyme related to the caffeine biosynthetic pathway and constructing an expression vector for transformation, introducing the vector into Agrobacterium, infecting a cell division-activated tissue piece of a coffee plant or a callus or an adventitious embryo induced from a coffee plant tissue piece, with Agrobacterium, and obtaining a transgenic coffee plant from a transformed tissue piece, transformed callus, or transformed adventitious embryo; or said process wherein the enzyme is xanthosine methyltransferase, a nucleoside deribose enzyme, a 7-methylxanthine methyltransferase, or a 3,7-dimethylxanthine methyltransferase; or a transformed coffee plant produced by the process.

Sano et al. teach nucleotide sequences encoding theobromine synthase (7-methylxanthine methyltransferase), which catalyzes the synthesis of theobromine (3,7-dimethylxanthine) from 7-methylxanthine; a method for decreasing theobromine synthesis in coffee plants, comprising introducing the theobromine synthase nucleotide sequence into a coffee plant in antisense orientation, or as a double-stranded RNA, wherein one strand encodes theobromine synthase, wherein the double-stranded RNA inhibits expression of theobromine synthase, resulting in a decrease in theobromine synthase in the plant; and transgenic coffee plants produced by said method. Sano et al. teach that inhibition of theobromine synthesis also inhibits caffeine biosynthesis. Sano et al. teach that the vector can be introduced into Agrobacterium, which are then used to infect callus, resulting in production of transformed plants (claims; Fig. 1; col. 2, line 64 to col. 3, line 8; col. 5, lines 23-30).

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sano et al. (JP 2002112785, publication date, April 16, 2002; application number JP 2000-307149, filing date October 6, 2000).

JP 2000-307149 is the parent foreign application that Sano et al., U.S. 6734342 claims priority to, and has the same teaching. This Japanese patent document anticipates the instantly claimed invention for the reasons discussed above.

8. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Stiles et al. (U.S. 6,348,641, issued February 19, 2002).

Stiles et al. teach nucleotide sequences encoding xanthosine-N7-methyltransferase; a method for inhibiting caffeine production in coffee plant, comprising inserting the xanthosine methyltransferase nucleotide sequence into an expression vector in antisense orientation, introducing the vector into Agrobacterium, infecting cell division-activated leaf tissue with the Agrobacterium. Transgenic coffee plants are produced. Caffeine production was inhibited as a result of the inhibition of xanthosine methyltransferase expression (claims; col. 3, line 65 to col. 4, line 7; col. 4, lines 46-61).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles et al. (U.S. Patent No. 6,075,184, issued June 13, 2000) in combination with Hatanaka et al. (Plant Cell Rep., 1999, Vol. 19, pages 106-110).

Stiles et al. teach nucleotide sequences encoding xanthosine-N7-methyltransferase; a method for inhibiting caffeine production in coffee plant, comprising inserting the xanthosine methyltransferase nucleotide sequence into an expression vector in antisense orientation, and introducing the vector into a coffee plant, to make transgenic coffee plants in which xanthosine methyltransferase expression and caffeine production are inhibited. Stiles et al. teach that the vector can be introduced into Agrobacterium, which are then used to infect callus, resulting in production of transformed plants (claims; col. 3, line 65 to col. 4, line 7; col. 4, lines 46-61).

Stiles et al. do not disclose Agrobacterium.

Hatanaka et al. teach a method to produce transgenic coffee plants via introduction of an expression vector into Agrobacterium, and infecting embryogenic calli with the Agrobacterium, followed by regeneration of transgenic coffee plants. Hatanaka et al. assert that previous methods of coffee cell transformation via electroporation of protoplasts, co-cultivation with A. rhizogenes, or biolistic delivery did not yield whole plants, or efficiency was low, or produced only transient transgene expression, respectively (pages 106-110).

It would have been obvious and within the scope of one of ordinary skill in the art to modify the method of inhibiting caffeine production in coffee of Stiles et al. by using the coffee plant transformation method of Hatanaka et al. to make the transgenic coffee plants. One would have been motivated to use the method of Hatanaka et al., as they assert that previous

transformation methods of coffee did not yield whole plants, or efficiency was low, or produced only transient transgene expression.

10. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al (U.S. Patent 6,930,227, issued August 16, 2005, filed May 25, 2000), in combination with Hatanaka et al. (Plant Cell Rep., 1999, Vol. 19, pages 106-110).

Mizuno et al. teach nucleotide sequences encoding an N-methyltransferase with 7-methylxanthine N3 methyltransferase, theobromine N1 methyltransferase (3,7-dimethylxanthine methyltransferase), and paraxanthine N3 methyltransferase activities. Mizuno et al. teach a method for inhibiting caffeine production in coffee plant, comprising inserting said N-methyltransferase nucleotide sequence into an expression vector in antisense orientation, and introducing the vector into a coffee plant, to make transgenic coffee plants in which 7-methylxanthine N3 methyl transferase, theobromine N1 methyltransferase, and paraxanthine N3 methyltransferase activities were decreased and caffeine production was reduced. Mizuno et al. teach that Agrobacterium can be used to produce the transgenic plants. Mizuno et al. also discuss expression of double-stranded RNA including all or part of the sequence of the target gene in transgenic plants to decrease N-methyl transferase and caffeine production (claims; col. 4, lines 37-41; col. 5, lines 18-27; col. 16, line 15 to col. 18, line 2; col. 9, line 58 to col. 10, line 30).

Mizuno et al. do not disclose an Agrobacterium-mediated transformation method for coffee plants.

Hatanaka et al. teach a method to produce transgenic coffee plants via introduction of an expression vector into Agrobacterium, and infecting embryogenic calli with the Agrobacterium, followed by regeneration of transgenic coffee plants. Hatanaka et al. assert that previous methods of coffee cell transformation via electroporation of protoplasts, co-cultivation with A. rhizogenes, or biolistic delivery did not yield whole plants, or efficiency was low, or produced only transient transgene expression, respectively (pages 106-110).

It would have been obvious and within the scope of one of ordinary skill in the art to modify the method of inhibiting caffeine production in coffee of Mizuno et al. by using the coffee plant transformation method of Hatanaka et al. to make the transgenic coffee plants. One would have been motivated to use the method of Hatanaka et al., as Mizuno et al. assert that Agrobacterium-mediated transformation can be used.

11. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiles et al. (U.S. Patent No. 6348641) in combination with Wesley et al. (Plant J., 2001, Vol. 27, pages 581-590).

Stiles et al. is discussed above.

Stiles et al. do not teach RNAi constructs.

Wesley et al. teach construct designs for efficient, effective gene silencing in plants, wherein the constructs encode self-complementary hairpin RNA that are sense and antisense with respect to the target gene. Wesley et al. assert that post-transcriptional gene silencing using anti-sense constructs usually result in only modest production of silenced individuals, whereas

recent work has shown that constructs encoding self-complementary hairpin RNA efficiently silence genes (abstract; pages 582-586).

It would have been obvious and within the scope of one of ordinary skill in the art to modify the method of inhibiting caffeine production in coffee plants of Stiles et al. by using the constructs of Wesley et al. to silence the expression of the xanthosine methyltransferase gene. One would have been motivated to do so, given the assertion by Wesley et al. that constructs encoding self-complementary hairpin RNA is more efficient at silencing genes than antisense constructs.

12. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashihara et al. (Trends Plant Sci., 2001, Vol. 6, pages 407-413) in combination with Hatanaka et al. (Plant Cell Rep., 1999, Vol. 19, pages 106-110) and Wesley et al. (Plant J., 2001, Vol. 27, pages 581-590).

Ashihara et al. teach the isolation of the cDNA of the caffeine synthase gene, whose product catalyzes the N-methylation of theobromine (3,7-dimethylxanthine) to produce caffeine. Caffeine synthase is 3,7-dimethylxanthine methyltransferase. Ashihara et al. teach that the cloning of this gene makes possible the engineering of transgenic coffee plants that are caffeine deficient, through antisense or RNAi interference. Ashihara et al. assert that demand for decaffeinated coffee has increased since the early 1970s (pages 410-412).

Ashihara et al. do not teach Agrobacterium-mediated transformation.

Hatanaka et al. teach a method to produce transgenic coffee plants via introduction of an expression vector into Agrobacterium, and infecting embryogenic calli with the Agrobacterium, followed by regeneration of transgenic coffee plants. Hatanaka et al. assert that previous

methods of coffee cell transformation via electroporation of protoplasts, co-cultivation with A. rhizogenes, or biolistic delivery did not yield whole plants, or efficiency was low, or produced only transient transgene expression, respectively (pages 106-110).

Wesley et al. teach construct designs for efficient, effective gene silencing in plants, wherein the constructs encode self-complementary hairpin RNA that are sense and antisense with respect to the target gene. Wesley et al. assert that post-transcriptional gene silencing using anti-sense constructs usually result in only modest production of silenced individuals, whereas recent work has shown that constructs encoding self-complementary hairpin RNA efficiently silence genes (abstract; pages 582-586).

It would have been obvious and within the scope of one of ordinary skill in the art to express the caffeine synthase cDNA of Ashihara et al. in antisense orientation in coffee plants. Any suitable transformation method could have been used to make the plants, for example method Hatanaka et al. One would have been motivated to use the method of Hatanaka et al., given the short comings of other transformation methods, as asserted by Hatanaka et al.

Alternatively, it also would have been obvious to express the caffeine synthase cDNA in an RNA interference configuration in coffee plants, using the constructs of Wesley et al, to cause inhibit caffeine production. It would have been obvious to introduce the constructs into coffee plants using the method of Hatanaka et al. One would have been motivated to express the caffeine synthase cDNA in an RNAi configuration, as Wesley et al. assert that it is more efficient at causing target gene inhibition. One would have been motivated to reduce the expression of caffeine synthase, and caffeine production, in coffee plants, given the assertion by Ashihara et al. that there is a demand for decaffeinated coffee.

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-4 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5-7 and 10-12 of U.S. Patent No. 6734342 ('342) in view of Hatanaka et al. (Plant Cell Rep., 1999, Vol. 19, pages 106-110).

The patented claims of '342 teach a method for decreasing theobromine synthesis in coffee plants, comprising introducing the theobromine synthase nucleotide sequence into a coffee plant in antisense orientation, or as a double-stranded RNA, wherein one strand encodes theobromine synthase, wherein the antisense nucleotide sequence or the double-stranded RNA inhibits expression of theobromine synthase, resulting in a decrease in theobromine synthesis in the plant; and transgenic coffee plants produced by said method. The patented claims do not

particularly teach Agrobacterium tumefaciens-based transformation. Hatanaka et al. teach a method to produce transgenic coffee plants via introduction of an expression vector into Agrobacterium, and infecting embryogenic calli with the Agrobacterium, followed by regeneration of transgenic coffee plants (pages 107-110). It would have been obvious to use any coffee plant transformation method with the claimed method of '342. One would have been motivated to use the method of Hatanaka et al., as they assert that previous methods of coffee cell transformation via electroporation of protoplasts, co-cultivation with A. rhizogenes, or biolistic delivery did not yield whole plants, or efficiency was low, or produced only transient transgene expression, respectively (page 106).

***Contact Information***

Any inquiry concerning this or earlier communications from the Examiner should be directed to Ashwin Mehta, whose telephone number is 571-272-0803. The Examiner can normally be reached from 8:00 A.M to 5:30 P.M. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at 571-272-0975. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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January 18, 2008

Ashwin D. Mehta, Ph.D.
Primary Examiner
Art Unit 1638